

ABSTRACT

Background: Patients with diabetes mellitus are at risk of developing impaired kidney function, which is indicated by an increase in blood ureum levels. Ureum level examination is influenced by the pre-analytical phase, particularly in relation to specimen storage. In serum separator tubes (SST), serum is often not separated from the blood clot. Proper and appropriate serum storage is essential to prevent a decline in sample quality.

Objective: Knowing the serum of diabetes mellitus patients with levels > 250 mg/dL stored in a serum separator tube (SST) for 7 days at a temperature of 2-8°C can be used to confirm ureum level examination.

Methods: This type of research is a pre-experiment with a static group comparison research design. The sample of this study was 30 samples of residual serum from outpatients at PKU Muhammadiyah Hospital Yogyakarta.

Results: The mean ureum level that was checked immediately (102.09 mg/dL), the mean ureum level that was stored for 7 days at 2-8°C (101.31 mg/dL). The percentage difference between the results of the examination of ureum levels that were immediately examined and those that were stored for 7 days at a temperature of 2-8°C was 0.76%. The difference in ureum levels was analyzed statistically with the wilcoxon test and the significance value (Asymp. Sig) was 0.643 ($p \geq 0.05$).

Conclusion: Can perform ureum level examination using serum from diabetes mellitus patients with levels > 250 mg/dL in a separator tube which is immediately examined and stored for 7 days at a temperature of 2-8°C.

Keywords: Ureum Levels, Serum Storage, Serum of Diabetes Melitus Patients

ABSTRAK

Latar Belakang: Penderita diabetes melitus berisiko mengalami gangguan fungsi ginjal yang ditandai dengan peningkatan kadar ureum darah. Pemeriksaan kadar ureum dipengaruhi oleh tahap pra-analitik, terutama terkait penyimpanan spesimen. Penyimpanan serum pada tabung *serum separator tube* (SST) tidak dilakukan pemisahan serum dari bekuan darah. Penyimpanan serum harus dilakukan dengan baik dan benar untuk menghindari terjadinya penurunan kualitas sampel.

Tujuan: Mengetahui serum pasien diabetes melitus dengan kadar > 250 mg/dL yang disimpan dalam *serum separator tube* (SST) selama 7 hari pada suhu $2-8^{\circ}\text{C}$ dapat digunakan untuk konfirmasi pemeriksaan kadar ureum.

Metode: Jenis penelitian ini adalah *pra-experimen* dengan desain *penelitian static group comparison*. Sampel penelitian ini sebanyak 30 sampel serum sisa pasien rawat jalan Rumah Sakit PKU Muhammadiyah Yogyakarta.

Hasil: Rerata kadar ureum yang segera diperiksa (102.09 mg/dL), rerata kadar ureum yang disimpan selama 7 hari pada suhu $2-8^{\circ}\text{C}$ (101.31 mg/dL). Persentase selisih hasil pemeriksaan kadar ureum yang segera diperiksa dan yang disimpan selama 7 hari pada suhu $2-8^{\circ}\text{C}$ sebesar 0.76%. Perbedaan kadar ureum dianalisis statistik dengan uji wilcoxon didapatkan nilai signifikansi (Asymp. Sig) 0.643 ($p \geq 0.05$)

Kesimpulan: Dapat melakukan pemeriksaan kadar ureum menggunakan serum pasien diabetes melitus dengan kadar > 250 mg/dL dalam tabung separator yang segera diperiksa dan 7 hari disimpan pada suhu $2-8^{\circ}\text{C}$.

Kata Kunci: Kadar Ureum, Penyimpanan Serum, Serum Pasien Diabetes Melitus